

REMARKS/ARGUMENTS

The claims are 2-10 and 12-17. Claim 1 has been canceled in favor of new claims 15-17.

New claim 15 combines previous claim 1 with the feature discussed in the paragraph bridging pages 3-4 of the specification that the angle of the holding flanks is no more than 30° relative to the walls. New claim 16 combines previous claim 1 with the feature discussed at page 5, 2<sup>nd</sup> full paragraph of the specification that the depressions contain concave or convex regions having a radius of curvature that is relatively five times greater than the relief depth. New claim 17 combines previous claim 1 with the feature of claim 1 as spacer-forming depressions.

Claims 3-6, 8-10 and 12 have been amended to depend on new claim 15, claim 2 has been amended to depend on new claim 16 and claim 7 has been amended to depend on new claim 17. In addition, new claims 13 and 14 have been added incorporating features from claims 2 and 5 respectively. The claims have also been amended

to improve their form and to delete reference numerals. The specification has been amended to provide headings and to delete reference to the claims as requested by the Examiner. Support for the claims may be found, *inter alia*, in the disclosure in the paragraph bridging pages 3-4 and at page 5 second full paragraph. Reconsideration is expressly requested.

The specification was objected to as lacking headings and as referring directly to the claims on page 2, line 12. In response, Applicants have amended the specification to provide headings and to remove reference to the claims as requested by the Examiner. It is respectfully submitted that the foregoing amendments overcome the objections of the Examiner to the specification, and Applicants respectfully request that the objection to the specification be withdrawn.

Claims 2, 5 and 10 were rejected under 35 U.S.C. 112, second paragraph, as being indefinite for the reasons set forth on pages 3-4 of the Office Action. Specifically, the Examiner objected to claims 2 and 5 as using the recitation "preferably" and to claim



vertically provided and open towards the bottom of the mold walls to provide a corresponding shape into the molded product.

In response, Applicants have canceled claim 1 and 11 in favor of new claims 15-17 and respectfully traverse the Examiner's position for the following reasons.

As set forth in new claims 15-17, Applicants' invention provides a molding insert for use with a molding machine for production of compacted molded bodies of material and deposit of the compacted molded bodies in a multi-layer arrangement. The compacted molded bodies formed in the molding insert are pushed via pressure devices out of the molding insert and in a downward direction. The molding insert includes at least one mold cavity having a plurality of walls including relief structures forming counterrelief structures on the molded body formed in the mold cavity.

The relief structures include depressions for forming projections on lateral surfaces of the molded body formed in the mold cavity. The depressions have holding flanks that arc

downwardly inclined towards the mold cavity interior, and the relief structures are coordinated with mold cavity volume and the material of the molded body so that the molded body remains in the cavity until pushed out via a pressure device without shearing off the projections located within the depressions.

As recited in new claim 15, the holding flanks are downwardly inclined towards the mold cavity interior at an angle no more than thirty degrees from the walls so that during the forced demolding, sliding of the projections along the holding flanks takes place with a gradual lateral deformation of the material of the molded body, preferably within the range of the elastic deformation. A slight remaining deformation of the projections on the lateral surfaces is not critical because the function of these projections to hold the molded body in the molding insert counter to its weight force is eliminated after demolding.

As recited in new claim 16, the depressions have concave or convex regions having a radius of curvature that is at least five times greater than the relief depth. As a result, a compacted

molded stone body produced in a mold cavity is connected with the relief structures via a positive lock with its lateral surfaces and in this manner held in the mold cavity even after the support of a vibrating table is removed.

As set forth in new claim 17, the walls include spacer forming depressions for forming spacer elements on the molded body formed in the mold cavities which have a greater depth than the relief depth of the relief structures and are open toward the mold cavity bottom. By having the spacer-forming depressions open in the downward direction, the spacer elements formed on the molded body experience no compressing deformation during demolding of the molded body from the mold cavity.

Johnson fails to disclose or suggest a molding insert in which the walls have depressions with holding flanks that are downwardly inclined towards the mold cavity interior at an angle no more than  $30^\circ$  from the wall as recited in new claim 15, or concave or convex regions having a radius of curvature that is at least five times greater than the relief depth as recited in new claim 16, or spacer-forming depressions for forming spacer elements having a greater depth than the relief depth of the

relief structures and being open towards the mold cavity bottom.

Johnson not only fails to disclose a molding insert having the structure recited in claims 15-17 but also is entirely unconcerned with the problem that Applicants have solved by increasing the holding force of a compacted block so as to avoid during multi-layer production, the falling of a compacted block out of the mold cavity prematurely, under the effect of its own weight.

Johnson discloses a mold for producing masonry units with roughened surfaces. Johnson's aim is to roughen up a side surface on a concrete block in order to give the block surface an irregular appearance similar to a natural stone. Roughening of the surface takes place as the compacted molded concrete block is pushed downward out of the mold. It is respectfully submitted that the characteristics of the mold according to Johnson must therefore always be viewed and understood with this aim in mind. The roughened surface is supposed to be visible during later use of the block.

In contrast, with Applicants' invention roughening of the side surface of the stone is not desirable, and is also

impractical, because there are typically paving blocks whose side surfaces are not visible after they have been put into place.

In order to achieve roughening of the side surfaces in *Johnson*, the lower flanks of the depressions must open into the side wall with a relatively large angle relative to the vertical. In the examples according to Fig. 3, 5, 7, 9, and 13 of *Johnson*, these are 90°, in each instance. Although *Johnson* indicates that the depressions can also have a V shape, it is necessary here as well, for the roughening effect, for the angle of the lower flanks to be great as compared with the vertical direction.

In contrast, as recited in new claim 15, it is important that the holding flanks form a small angle relative to the vertical, so that the concrete projection of the side wall of the compacted block, which projection projects into the depression, is not sheared off when the block is pressed out downwards, but instead glides along the holding flank and is elastically pressed into the side surface of the concrete block. The angle of the holding flanks relative to the vertical amounts to at most 30° for this purpose, as set forth in new claim 15, which it is



respectfully submitted is nowhere disclosed or suggested by anything taught in *Johnson*.

The depressions in *Johnson* can also be semi-circular, as shown in the example of Fig. 5; however, for a roughening function, the lower flank of the semi-circle must necessarily form a large angle with the vertical, which happens automatically with a half-circle shape, at an angle of 90°. In the case of the ear shape of the cross-section, which *Johnson* also mentions at column 4, line 20, the angle would actually be greater than 90°.

In contrast, although Applicant's molding insert may also have an arc-shaped progression, the radius of the arc is relatively great as compared with the depth of the relief, and specifically five times as great as recited in new claim 16, which it is respectfully submitted is likewise nowhere disclosed or suggested in *Johnson*.

*Johnson* lets the depressions in the side walls of the mold run predominantly horizontally or at a slant, with the aim of roughening the side surface, whereby the roughened side surface



used as such for paving stones for quite sometime; it is respectfully submitted that the depression 56 of Long which can be seen in FIG. 10 in a perspective view and in FIGS. 8 and 9 in a top view have nothing to do with the surface of a block as in Applicants' molding insert as recited in new claim 17 as is evident from the top view according to FIG. 8 and FIG. 9 of Long. In Long, the depressions 56 serve as guides for the insertion of end pieces 118, which determine the end surfaces of the block. In column 5, lines 71 to column 6, lines 17, Long describes how the end pieces 118 are guided in the depressions 56 with laterally projecting ribs 120.

In contrast, the additional depressions and their greater dimensions as compared with the relief structure, and the opening of these additional spacer-forming depressions downward as recited in new claim 17 is of particular advantage for block molds, particular paving blocks, in which such spacers are of importance. Because of the greater depth of the spacers, it is ensured that an interstice will remain between the relief structures of adjacent blocks, in any case, by means of which rainwater can flow away downwards. These additional spacer-

forming depressions are nowhere disclosed or suggested by anything taught by Long.

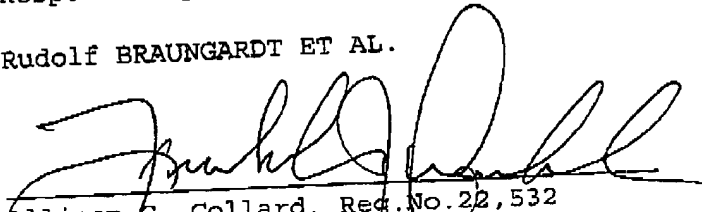
Accordingly, it is respectfully submitted that new claims 15-17 and the claims dependent thereon are patentable over the cited references.

In summary, claims 2-10 and 12 have been amended, claims 1 and 11 have been canceled, and new claims 13-17 have been added. The specification has also been amended. In view of the foregoing, it is respectfully requested that the claims be allowed and that this case be passed to issue.

Respectfully submitted,

Rudolf BRAUNGARDT ET AL.

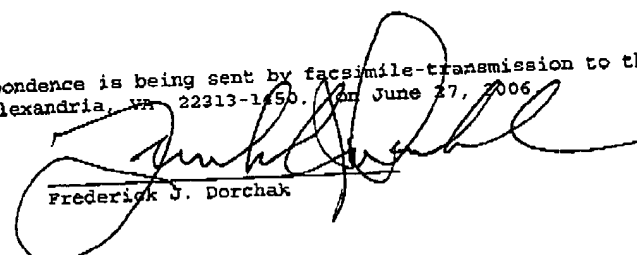
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